

## Masterarbeit zu vergeben

### Comparative Analysis of the Level of Development and Current Application of Condition Monitoring (CM) and Predictive Maintenance (PdM) Techniques across different Modes of Transportation.

### Vergleichende Analyse des Entwicklungsstandes und gegenwärtiger Anwendung von Techniken zur Zustandsüberwachung und prädiktiven Instandhaltung bei verschiedenen Verkehrsträgern

Condition Monitoring can be regarded as a mean to perform, ideally in real-time, continuous assessment of parameters and faults in an operation or process through the advanced monitoring of dynamical systems. The main objective of CM is to avoid the temporal deterioration of the system by identifying the possible faults before they develop into a stage at which they could represent a potential risk for the desired operation. It also intends to establish the cause of the faults (diagnostics) and to predict the possible evolution of them into major failures (prognostics).

CM is the core component of Predictive Maintenance (PdM), which is an advanced proactive maintenance strategy that not only uses condition information, but also has the capacity to predict potential failures and take maintenance actions in a timely and appropriate manner.

Based on the consideration of the railways as critical applications, where the presence of a fault could derive in severe consequences, it would be natural to think that CM and PdM is normally applied to railway tracks and vehicles. Surprisingly, this is not always the case.

The objective of this work is to perform a comparative analysis on the level of development and current application of CM and PdM across different modes of transportation, in order to determine the technological delay of the railway in this field compared to other important, more technological transport modes, like automobile and aircraft. Based on the obtained results, It could be possible to make a conclusion on the topic and to identify the areas of opportunity for the railway regarding CM and PdM.



Bei Interesse wenden Sie sich bitte an:  
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